



Event Data Recorders in Light-duty Vehicles

Testimony of the
Alliance of Automobile Manufacturers
Before the
Virginia General Assembly
Joint Commission on Technology and Science
Privacy Advisory Committee
October 6, 2004

Outline

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Data Recorder Use by Transportation Mode

Mode	Use Rec'd / Req'd
Aviation	Late 1950s
Marine	Mid 1970s
Highway (Heavy Vehicles)	Late 1980s
Railway	Mid 1990s
Highway (Light Vehicles)	Mid 1990s

US Government Agency Endorsements

◆ NTSB Recommendations

- ◆ H-97-18 & -21 (1997): "Develop and implement, in conjunction with the NHTSA, a plan to gather better information on crash pulses and other crash parameters in actual crashes, utilizing current or augmented crash sensing and recording devices."
- ◆ H-04-26 (2004): "Once standards for event data recorders are developed, require their installation in all newly manufactured light-duty vehicles."

◆ NASA Jet Propulsion Lab Recommendation (1998)

- ◆ "Study the feasibility of installing and obtaining crash data for safety analyses from crash recorders on vehicles."

Proposed Federal Regulation

- ◆ NHTSA NPRM Docket No. NHTSA—2004—18029 (69 Fed. Reg. 32932; June 14, 2004)
 - ◆ Voluntarily installed EDRs should record a minimum set of specified data elements
 - ◆ Specifies requirements for data format
 - ◆ Increased survivability requirements for EDRs
 - ◆ Vehicle manufacturers to make publicly available information for accessing EDR data
 - ◆ Standardized Owner's Manual disclosure statement

Safety Benefit of EDRs

- ◆ EDR data provides objective and specific information that can lead to improvements in vehicle and safety system designs.
- ◆ Objective data will improve the quality of databases such as FARS and NASS that form the basis of NHTSA regulation.
- ◆ Helps to better understand crash causation

What is an EDR?

- ◆ An EDR is a function or feature that records vehicle and occupant information for a brief period of time.
- ◆ Vehicle EDRs are not stand alone modules; they are typically housed in a vehicle control module (e.g., air bag)
- ◆ The purpose of an EDR is to record data for retrieval after a crash that will assist the understanding of how a vehicle's system performed.

The EDR vs. The Flight Data Recorder (FDR)

♦ EDR

- ♦ Intended to be used to understand vehicle system operations
- ♦ Records limited data for a limited time period
- ♦ Little to no cost to the host module
- ♦ No audio record

♦ FDR

- ♦ Intended to be used to reconstruct the cause of a crash
- ♦ Records extensive crash and in-flight data
- ♦ Designed to survive a crash
- ♦ High cost
- ♦ Often records audio

What may be recorded by an EDR?

- ◆ Possible data
 - ◆ Vehicle speed
 - ◆ Percent throttle
 - ◆ Engine RPM
 - ◆ Brake switch status
 - ◆ Seat belt buckle status
 - ◆ Seat position
 - ◆ Order of events
- ◆ System status parameters
 - ◆ Time to deployment
 - ◆ Air bag stage deployed
 - ◆ System diagnostic data
 - ◆ Suppression status
- ◆ Vehicle crash severity
 - ◆ Delta-V or Acceleration

Circumstances Under Which EDR Data is Stored

- ◆ Data is stored in a temporary storage buffer and is constantly over-written unless there is an air bag deployment or severe non-deployment event.
- ◆ Data is only permanently stored in the event of a deployment-level crash.
- ◆ Possible EDR recording time frame:
 - ◆ Up to 10 seconds before a crash event and up to 300 milliseconds after a crash event.

Circumstances Under Which EDR Data May be Accessed

- ◆ With the consent of the vehicle owner or lessee.
- ◆ In litigation through the discovery process.
- ◆ In response to an official request of police or similar government office.
- ◆ As otherwise required by law.

How Can EDR Data be Accessed?

- ◆ Special equipment is required.
- ◆ Access to the vehicle is needed.
- ◆ Some vehicle manufacturers have licensed the proprietary information necessary to access EDR data to third-party toolmaker.
- ◆ An EDR interrogation tool is available to the public and costs approximately \$2,500.

Value of EDR Data

Category	Examples
<i>Auto Companies:</i> Improve the understanding of crash events and functioning of safety systems	<ul style="list-style-type: none"> ♦ EDR data used to develop better calibrations for air bag system performance
<i>Government – Safety Agencies:</i> Provide factual basis upon which to develop administrative regulations and guidelines, and improve vehicle design recommendations and highway infrastructure	<ul style="list-style-type: none"> ♦ justify offset frontal impact severity ♦ examine “real world” average/extreme vehicle crash pulses
<i>Crash Reconstructionists:</i> Provide objective data for analytical evaluation and technique validation	<ul style="list-style-type: none"> ♦ compare data with computer models and other methods of analysis ♦ better understand crash pulse relative to injury
<i>Law Enforcement and Emergency Assistance:</i> Provide objective, factual data for investigation and assessment	<ul style="list-style-type: none"> ♦ accident investigation ♦ indicate potential severity of accident or rescue workers

Summary

- ◆ Installation of EDRs in light-duty vehicles in the United States is following a general trend to equip all transportation modes with data recorders.
- ◆ The NTSB, NASA, and the NHTSA are pursuing the installation of EDRs in light-duty vehicles to improve the database of crash statistics.
- ◆ EDRs are not flight data recorders. EDRs record limited data for limited period only in the event of a crash or near-crash event.

Summary

- ◆ EDRs can improve understanding of crash events and lead to improvements in vehicle safety systems.
- ◆ Federal Policy is needed to preempt inconsistent state or local laws that could jeopardize potential benefits of EDRs.
- ◆ Simplification of the technical specifications proposed by NHTSA for voluntarily installed EDRs is needed.
- ◆ Alliance supports disclosure in Owner's Manuals and Service Agreements.
- ◆ Alliance advocates that EDR data should be accessed only with vehicle owner's consent.

Policy Recommendation

- ◆ Adopt Alliance Model State Bill:
 - ◆ Requires manufacturers to disclose presence of EDR in Owner's Manuals.
 - ◆ Specifies that EDR data may not be accessed by a person other than the owner unless a specific exception is met.
 - ◆ Requires that subscription service agreements disclose that specified crash-related information may be recorded and transmitted.



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